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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
195 BROADWAY, NEW YORK 7

SD-30865-011-012 ISSUE 6-D
CD 3-B APP. 1-D
RATING AT&TCo Std.
SYSTEM Step-By-Step - Ckt.
DATE June 24, 1954

DRAWING NOTICE

TITLE

Step-By-Step Systems - No. 1 Or 350A - Auxiliary Trunk Circuit - Arranged To Connect An Incoming Trunk - From A Step-By-Step Office - To A Rotary Out-Trunk Switch Circuit

DESCRIPTION

The Use of the circuit is extended to offices arranged for AMA. This requires reference to AMA in circuit notes 102 and 105 and cross-connections Fig. 54.

Current drain is not affected.

Equipment information is not affected.

Engineering Requirements are not affected.

No engineering letter will be issued.

CIRCUIT DESCRIPTION
SWITCHING SYSTEMS DEVELOPMENT DEPARTMENT

CD-30865-01
Issue 3-B
Appendix 1-D
Dwg. Issue 6-D

STEP BY STEP SYSTEMS
NO. 1 OR 350A
AUXILIARY TRUNK CIRCUIT ARRANGED TO CONNECT AN INCOMING TRUNK FROM A STEP BY STEP OFFICE TO A ROTARY OUT-TRUNK SWITCH CIRCUIT

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Reference to AMA is added to Notes 102 and 105 and Fig. 54.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 2353-MBB-EWO-GC

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AMERICAN TELEPHONE AND TELEGRAPH COMPANY
195 BROADWAY, NEW YORK 7

SD-30865-011-012 ISSUE 5-B
CD 3-B APP.
RATING AT&TCo Std.
SYSTEM Step-By-Step - Ckt.
DATE September 24, 1953

DRAWING NOTICE

TITLE

Step-By-Step Systems - No. 1 Or 350A - Auxiliary Trunk Circuit - Arranged to Connect An Incoming Trunk - From A Step-By-Step Office - To A Rotary Out-Trunk Switch Circuit

DESCRIPTION

1.1 When this circuit is used with Rotary Out Trunk Switches having outgoing trunks with repeaters, the ROT Switch may fail to stop on an idle trunk.

1.11 This is due to the fact that this outgoing repeater may return ground on the sleeve to the ROT Switch at the same time, or before, this circuit sends ground forward. This short circuits the primary winding of the SL relay of the ROT Switch, which will step to the next trunk.

1.12 The trouble is corrected by replacing a slow acting relay be a fast operating relay and adding a slow releasing relay to hold over pulsing. A Y258 relay of Fig. A is replaced by a U681 and a Y240 relay.

1.13 This trouble was introduced on Issue 4-D, May 1, 1952, which made provision for the use of this circuit described in 6.1 above.

1.2 A B1048 relay having non inductive shunts across each line winding replaces a B57 relay (A) and two 60MF associated condensers, to provide a simpler circuit arrangement, for new circuits.

1.3 The 307N retard, coil has been replaced by a 274L retard. coil to concentrate demand on the 274 type.

1.4 The function of the E and H relays have been combined.

1.5 Provision for peg count on calls which reach a ROT Switch has been made by adding a Y67 relay.

1.6 The features described in 6.2 to 6.5 are shown in Figure 3.

1.7 The changes described in 6.12 shall be applied wherever both options Z and W have been used.

Current drain is not affected.

Equipment information in the form of J33015M will be prepared by Hawthorne.

Engineering Requirements will be covered in BSP AA231.820 Issue 3, App. 3.

No engineering letter will be issued.

CIRCUIT DESCRIPTION
SWITCHING SYSTEMS DEVELOPMENT DEPARTMENT

CD-30865-01
Issue 3-B
Dwg. Issue 5-B

STEP-BY-STEP SYSTEMS
NO. 1 OR 350A
AUXILIARY TRUNK CIRCUIT ARRANGED TO CONNECT AN INCOMING TRUNK FROM A STEP-BY-STEP OFFICE TO A ROTARY OUT-TRUNK SWITCH CIRCUIT

CHANGES

B. CHANGES IN APPARATUS

B.1

Superseded	Superseded By
Y-258 Relay (B) Fig. A	U681 Relay (B) Y240 Relay (B1) Fig. B or 3
B57 Relay (A) 2-KS-13486 Condensers Fig. 1	B-1048 Relay A Fig. 3
U-298 Relay (H) 18EJ Resistance and U717 Relay (E) Fig. 1	U881 Relay H - Fig. 3
307N Ret Coil Fig. 1	274L Ret Coil Fig. 3

B.2 Added

Y67 Relay (PC)
2 - 19 PH Res
2 - 19 AB "
2 - KS8512L3A Res - Fig. B
2 - 19 LP Res. - Fig. 3

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Fig. B is added to replace Fig. A when modifying circuits associated with ROT switches having a repeater or trunk circuit beyond the switch.

D.2 Fig. 3 is added to replace Fig. 1 for all new installations.

D.3 Notes 101, 102 and 103 are revised and notes 104 and 105 are added for record of the above changes.

D.4 Cross-connection Fig. 53 is added, and Fig. 51 is revised to remove "Z" option from wiring to the (A) cond.

D.5 Cross-conn. Figs. 54, 55 and 56 are added.

All other headings under changes,no change.

1. PURPOSE OF CIRCUIT

1.1 This circuit provides a means of connecting a two-wire trunk incoming from a distant step-by-step office, to a three-wire rotary out-trunk switch having access to trunks to a distant dial office.

2. WORKING LIMITS

2.1 Maximum external circuit loop resistance to 45-50 volts - 2700 ohms.

Minimum insulation resistance - 30,000 ohms.

3. FUNCTIONS

3.1 When seized, to ground the sleeve to the rotary out-trunk switch.

3.2 To prevent cut through to the rotary out-trunk switch should the trunk be seized when all the trunks available to the rotary out-trunk switch are busy or when seized while the rotary out-trunk switch is hunting an idle trunk.

3.3 On a call from an automatic ticketing office, to cut through when a trunk becomes available, unless seized during an all trunks busy interval.

3.4 If seized while hunting on a call from a step-by-step office without automatic ticketing, to prevent subsequent cut through, and to return a busy signal to the calling trunk when required.

3.5 To hold during pulsing.

3.6 To provide a transmission circuit.

3.7 To make the seized trunk busy to all other incoming appearances.

3.8 With fig. 3, to peg count on calls which reach a R.O.T. switch.

4. CONNECTING CIRCUITS

When this circuit is listed on a keysheet the connecting information thereon is to be followed.

4.1 Rotary Out-Trunk Switch Circuit - SD-30868-01.

4.2 Auto Ticketing Trunk at Distant Offices - SD-31949-01.

4.3 O.G. Repeater at Distant Office SD-31779-01*

4.4 Tone Supply - SD-31521-01.

4.5 Traffic Register Circuit SD-30896-01*.

*Typical Circuit

DESCRIPTION OF OPERATION

5. TRUNK IDLE

5.1 Figs. 1 and A

When the associated rotary out trunk switch is idle it is standing on an idle trunk and the tip and ring are extended back through this circuit to the incoming trunk from the step-by-step office. When the tip and ring are closed relay A and in turn B are operated which connects ground forward to the sleeve of the rotary out trunk switch, causing the latter and the trunk on which it is resting to appear busy to other circuits. When pulsing starts, relay A follows the pulsing and relay B remains steadily operated.

5.2 Figs. 1 and B or Fig. 3

The action is as described in 5.1. (B) operates quickly on its primary winding, and closes the circuit from (A) to (PC) which operates. (B1) holds over pulses as (A) releases and reoperates, holds (B) over its secondary winding, and opens the operating circuit to the primary winding of (B). Resistances T and R delay or prevent operation of the A and B relays of the circuit beyond the ROT switch until B has operated. This is to insure this circuit sending ground forward on the sleeve, for operating the SL relay of the ROT switch, before the repeater or trunk beyond the switch can send ground back, which would prevent operation of the SL relay.

6. HUNTING

While the rotary out trunk switch is hunting, ground is connected to lead S, operating E Fig. 1, or H, Fig. 3 through the back contact of B. With Fig. 1, E operates H, and locks to the sleeve through H. When the R.O.T. switch comes to rest on an idle trunk, ground is removed from the sleeve, and E if operated, and H will release. If however this circuit is seized while H, and E when provided, are operated, A and B operate as described in paragraph 5. When W option is provided, or when X option is provided and all trunks on the banks of the R.O.T. switches are busy, ground on lead B will operate G which will lock to B, and will hold H operated. When "Z" option and Fig. 2 are used the originating subscriber will receive overflow tone, and should disconnect. This will release A, B, and B1. When Y option is used, the automatic ticketing sender at the originating office will time out, and the automatic ticketing trunk will return busy tone to the calling subscriber who should disconnect, releasing A and in turn B and B1. When a trunk on the banks of the ROT switch becomes idle, E and H will release.

7. PEG COUNT

When A releases at the end of a call PC releases, grounding lead R to the Traffic Register Circuit. PC releases B1 which opens lead R. The resulting ground pulse operates the traffic register.

CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT

CD-30865-01
Issue 1
Appendix 2-D
Dwg. Issue 3-D

STEP-BY-STEP SYSTEMS
NO. 1 OR 350A
AUXILIARY TRUNK CIRCUIT
ARRANGED TO CONNECT AN INCOMING TRUNK FROM AN AUTOMATIC TICKETING OFFICE TO A ROTARY OUT-TRUNK SWITCH CIRCUIT

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Equipment designation formerly was shown as (AUX TRK)

All other headings, no change.

BELL TELEPHONE LABORATORIES, INC.

DEPT. 3310-GJW-RLL-WV

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CIRCUIT DESCRIPTION
SYSTEMS DEVELOPMENT DEPARTMENT

CD-30865-01
Issue 1
Appendix 1-D
Dwg. Issue 2-D

STEP-BY-STEP SYSTEMS
NO. 1 OR 350A
AUXILIARY TRUNK CIRCUIT
ARRANGED TO CONNECT AN INCOMING TRUNK FROM AN AUTOMATIC TICKETING OFFICE TO A ROTARY OUT-TRUNK SWITCH CKT.

CHANGES

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Tone Supply lead of Fig. 2 connected to LTI-60 IPM BR2.

D.2 Note 101 showed a 1/2 amp. fuse for LTI-60 IPM BR2, Fig. 2.

All other headings, No change.

BELL TELEPHONE LABORATORIES, INC.

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